OCT 26 1941

Electrical World

NEWS ISSUE OCTOBER 25, 1941

NTER ... ALL GOVERNMENT EFFORTS to save critical materials ... be OP... a newly created Bureau of Industrial Conservation, headed by ...ing J. R... anwald (above). Activities will be carried on through OPM Com-...dity Br...ches, which include Electrical Products Unit for appliances

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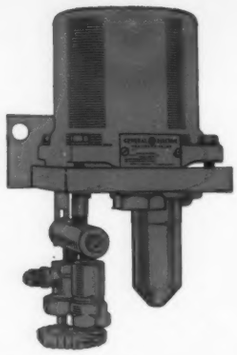
Whenever  THIS RELAY OPERATES

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2. If the warning sounds at a time when the cable cannot be taken out of service, you can valve-feed enough extra gas to make up for the leak until a more convenient time.

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Electrical World

NEWS ISSUE

Volume 116, Number 17 October 25, 1941

Eight Dams and Steam Plant In Construction

Tennessee Valley Authority projects under construction will increase installed capacity to more than 2,000,000 kw., and firm power capacity to 1,212,000 kw.

In a stepped-up and vastly expanded program to provide power for national defense, the Tennessee Valley Authority has now under construction eight dams, ranging from the giant Kentucky project at the mouth of the Tennessee River to relatively small storage projects near the headwaters of the Hiwassee.

These projects, together with a large steam-electric generating station being built at Watts Bar Dam, will bring the installed capacity of the TVA system from its present 1,050,000 kw. to more than 2,000,000 kw. and increase the continuous firm power capacity from 661,000 to 1,212,000 kw., based on the driest year of record.

Further Increases Seen

Still further increases are presaged by the President's request to Congress for funds to construct Fontana Dam on the Little Tennessee, site of which was recently transferred to TVA by the Aluminum Company of America, and Douglas Dam on the French Broad River. Initial installed capacity of these projects would be about 200,000 and 70,000 kw., respectively, and their storage would provide water for additional downstream installations. Funds also were asked for a fourth 60,000-kw. unit at Watts Bar steam plant.

The Watts Bar steam plant and five of the eight dams under construction were authorized specifically as national defense power projects and are being carried forward under emergency construction schedules.

The other three projects—Kentucky, Watts Bar and Fort Loudoun dams—were authorized as units in the authority's normal program for control of the Tennessee River system, but they have been designated as national defense projects and construction schedules have been set forward in order to bring their power facilities into operation as early as possible.

TVA's Largest

Closure of Kentucky Dam, TVA's largest project, has been advanced by a full year to January, 1944; the first generating unit is scheduled to be ready for operation by February, 1944, fifteen months ahead of the original schedule. Watts Bar construction schedule has been advanced eight months and Fort

STEAM AND HYDRO—At Watts Bar Dam initial installed generating capacity will be 90,000 kw. Four 60,000-kw. units are planned for steam plant, in foreground. Both projects are being speeded to completion

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Loudoun by a year, to be in operation in 1943 instead of 1944.

The authority recently let contracts for the five generating units to be installed at Kentucky. Allis-Chalmers Manufacturing Co., Milwaukee, Wis., will provide the 44,000-hp. turbines for $3,362,400 and General Electric Co., Schenectady, N. Y., will build the 32,000-kw. generators for $2,652,319.

16 Months for Cherokee

Cherokee Dam, authorized on July 31, 1940, and the 180,000-kw. steam plant, two units of which were authorized at the same time and the third on April 5, 1941, are nearing completion. Closure of the dam is now scheduled for December of this year, sixteen months after construction was started. By April, 1942, the first of three 30,000-kw. generating units is to be ready for operation. Norris took three years to build.

Construction was commenced in July on the four Hiwassee projects—Apalachia, Ocoee No. 3, Chatuge and Nottely dams—which will result in the addition of 208,000 kw. of installed capacity to the TVA system. Apalachia Dam, located some miles below Hiwassee Dam, which was completed in 1940, will have an installed capacity of 75,000 kw., while Ocoee No. 3, on the Ocoee River, will have 27,000 kw.

The Apalachia and Ocoee No. 3 projects represent a departure from previous TVA construction jobs in that they include tunnels to power houses to be located downstream. About 385 ft. of head will be obtained at Apalachia by a dam 150 ft. high and a diversion tunnel 43,000 ft. in length. Ocoee No. 3 project, including a 110-ft. dam and a 12,000-ft. tunnel, will have about 300 ft. of head.

Defense Demands

Defense demands for electric power have placed a heavy load on the TVA system during the past year and the new projects are being constructed to meet additional anticipated national defense loads. For example, the Aluminum Company of America has nearly completed an expansion program approximately doubling the capacity of its Alcoa, Tenn., plant, one of the largest in the country. TVA is serving a new aluminum plant of Reynolds Metals Co. at Muscle Shoals, and demands of electrometallurgical and electrochemical companies in the area are increasing. Industries served by 76 municipalities and 39 cooperative associations also add to the demand.

Indication of the growing load is the fact that the maximum peak demand on the TVA system during the fiscal year 1941 was 913,000 kw., as compared to 779,000 in 1940.

NEWS BRIEFS

HALF A CENTURY is the service record of Charles R. Burroughs, assistant engineer in the Newark office of the meter and wiring engineer of Public Service Electric & Gas. Shown here at the speakers' table during the dinner given him by his business associates are, left to right, seated: Watson F. Tait, assistant general superintendent of electric distribution; Marion Penn, general manager, electric department; William S. Davis, executive assistant, Bergen division; Jacob T. Barron, vice-president. Standing, left to right, are: Unemployment Compensation Commission Director and former New Jersey Governor Harold G. Hoffman; Mr. Burroughs; Leslie D. Price, meter and wiring engineer; George W. Grimm, Jr., assistant general counsel. Over in the Passaic division, Harry A. Ecklin, division line engineer, also was recently awarded the diamond-studded 50-year service emblem.

POTOMAC ELECTRIC POWER is having installed in its engineering office a new 110 circuit a-c network calculator built by Westinghouse. It will be used to analyze regulation, short circuit and stability problems. It will be used also to determine most economical methods of connecting a new transmission line and to simulate the effect of tap-changing transformers and condensers.

AN OVER-ALL service grade of 97.44 recently won for Commonwealth Edison Company first place among Illinois utilities, according to a report just issued by the Illinois Commerce Commission. Previous survey by the Commission in 1938 netted the company a grade of 96.74. Improvements in meter testing, handling of complaints, maintenance of distribution lines, meter refunds, voltage survey and meter records and tests earned the new top rating.

SAD BUT TRUE is the proviso attached to a recent prospectus of Wisconsin Power & Light Co., which declared: "The company is not in a position to determine the future effect upon its business and earnings of the increasing burden of taxation, possible municipal or governmental competition, public ownership of facilities, state or federal regulatory legislation, possible rate reductions, the program for national defense, decrease in payment of public moneys to farmers or unemployed persons or fundamental changes in economic or business conditions in the territory served by the company."

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Chlorinated Solvent Allocation Applied

Chlorinated solvents (carbon tetrachloride, trichlorethylene, perchlorethylene and ethylene dichloride) have been placed under a detailed system of allocation applicable both to defense and non-defense uses.

The allocation order, issued by Priorities Director Nelson, stipulates first that all defense—"A" rating—orders must be filled. Producers next must set aside as an emergency pool 5 percent of their production or 20 percent of their non-defense supplies (whichever is smaller). This pool will be distributed on specific order of Mr. Nelson, to fill emergency requirements.

Third in order of distribution are supplies for cleaning of metals in electrical equipment and manufacture of chlorinated hydrocarbon refrigerants, among others. Deliveries to these categories must be limited to the average monthly deliveries of the first six months of 1941, except for refrigerants (for which quantities will be determined month by month by Mr. Nelson).

A final category of distribution includes other uses of the solvents considered non-essential. These may be given quantities up to the average deliveries during the first half of the year so long as supplies are available.

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Bessemer Ouster Suit Challenged by Utility

The city of Bessemer's right to disfranchise the Birmingham Electric Co. and thus forbid the electric utility to operate in that city in competition to the municipally owned, TVA-served plant was challenged when the utility company recently filed in the Bessemer Circuit Court an answer to the city's ouster suit.

In its answer the Birmingham Electric Co. avers that it and its predecessors have conducted an electric utility business in Bessemer continuously for nearly 50 years. Asserting that it has valid franchises, the company's answer contends that the ordinance passed by the city last April revoking the rights and franchises of the company is null and void.

House Votes $6,000,000 to Speed Grand Coulee

Units 7, 8 and 9, each of 108,000 kw. capacity, may be ordered and second power plant started — Appropriation for additional 80,000 kw. at Boulder

The House of Representatives has approved a deficiency appropriation of $6,000,000 to step up again the schedule for installing generators at Grand Coulee. The money is made available to permit the Bureau of Reclamation to order units 7, 8 and 9, each of 108,000-kw. capacity, for the initial power house and to begin construction of the second power house.

80,000 Kw. for Boulder

In the same appropriation measure the House included a sum of $1,750,000 for purchase of an additional 80,000-kw. unit for Boulder Dam to provide for defense loads. The House committee, however, eliminated from the measure a Bureau of Reclamation request for $3,000,000 with which to start clearing rights-of-way and to order materials for three 150,000-volt transmission lines from Shasta and Keswick dams in Central Valley to Antioch, Cal., where the public power bloc wants to locate a steam station. The committee ruled the project isn't needed now—neither Shasta nor Keswick will be completed before the end of 1943 at the earliest—and an effort on the House floor to reinsert the appropriation was defeated.

The additional Grand Coulee appropriation gives that project funds with which to schedule installation of six 108,000-kw. generators in the Pacific Northwest within a few months' period in 1942 and 1943. Congress earlier this year advanced initial funds for ordering units 4, 5 and 6 at Coulee, which are now on order. The first unit now is on the line and units 2 and 3 will be in before spring.

Whether Reclamation will be able to obtain necessary priorities for delivery of this much capacity in such a short space of time is not certain in view of the Supply Priorities and Allocations Board's ruling that all new construction must be shelved unless it is necessary for defense or the health and safety of the population. SPAB Executive Director Donald M. Nelson, who also is Director of Priorities, has indicated pointedly that he intends to take the board's ruling literally and enforce it universally, on public and private projects alike.

Scheduled installation of six units at Coulee by 1943 or earlier is considerably faster than the schedule proposed by the Federal Power Commission in its five-year program for maximum generating expansion planned on a geographical basis for meeting over-all defense needs. That program listed three units at Grand Coulee in the winter of 1942-43 and one more in each of the years 1943, 1944 and 1945.

The House committee's adverse action on the Central Valley appropriation marks the second time this year that body has voted to alter the plans of the public power bloc for development of Central Valley. Last spring the committee refused to vote $5,000,000 to start construction of a 150,000-kw. steam station at Antioch, which Reclamation urged be built to firm up the Shasta and Keswick hydro energy. At the hearings on the request for funds to start the transmission line work Congressmen charged the lines would duplicate existing utility lines which could transmit Central Valley power to the same potential markets.

Another item stricken from the deficiency measure by the committee was the $40,000,000 additional funds sought by the President for the Tennessee Valley Authority to start construction of Fontana Dam, a hydro site recently acquired by TVA from Aluminum Co. of America, and two storage dams. The committee promised this appropriation would be sent to the House floor within a week or two as a separate bill.

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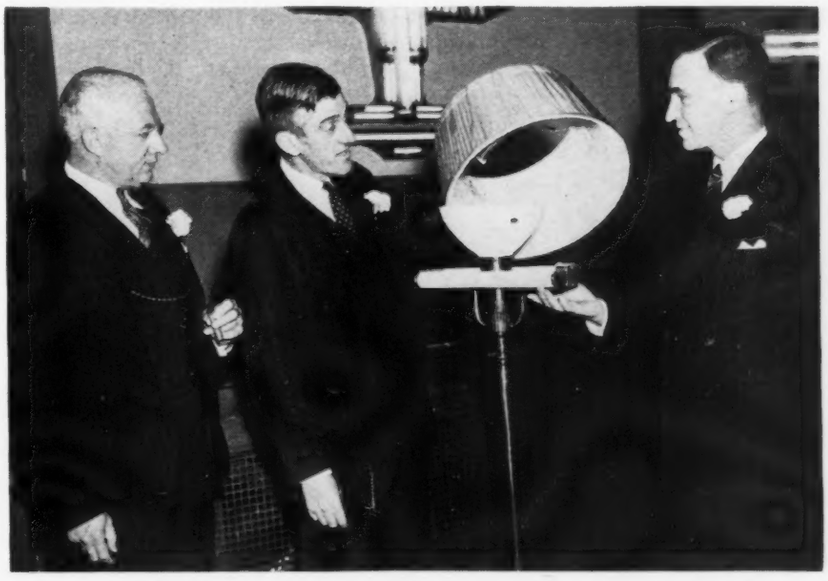
Wisconsin Stops 75 Percent Plan

The nationally famous 75 percent discount plan of the Wisconsin Public Service Corp., originally intended to continue to the end of December, 1941, has been ordered discontinued as of October 31, according to a recent announcement by the Wisconsin company.

In general the plan permitted customers of the utility to apply 75 percent of the increase in their monthly bill against the purchase price of the appliance bringing about the increase in energy consumption.

Several factors are reported to have dictated the shortening of the campaign, the principal one being the inability of most dealers to get merchandise as fast as they can sell it. Another factor is that if merchandise can be sold without the stimulus of the discount credits, it is reasonable to save the considerable amount that the credits would cost. Credits since the plan was first announced have amounted to $213,800 and it is expected that by the end of the credit periods, sometime in 1943, an additional $350,000 will have been earned.



GOVERNOR'S LAMP—Presentation of an I.E.S. floor lamp using fluorescent tubes and incandescents to Gov. Leverett Saltonstall of Massachusetts at the Boston Fluorescent Futurama, attended by 2,500 visitors this month. C. C. "Larry" Walker, manager New England Division, Lamp Department, General Electric Co. (right), and G. H. MacGilvray, New England manager Westinghouse Lamp Division, do the honors for the manufacturers

Boston Edison Orders Second 50,000-Kw. Unit

Unit not yet assigned to specific plant — Company now has 118,750 kw. on order for system steam plants — Work started on foundations for new Mystic station

With the ordering of a second 50,000-kw. G.E. high-pressure steam turbine generator unit Boston Edison Co. brings the total generating capacity to be added to its production facilities by the fall of 1943 to 118,750 kw., thus taking another long stride in system planning to meet defense and other loads. The new unit is a duplicate of a machine which was ordered about a year ago for 1942 delivery and for installation at the new Mystic plant.

At the L Street station in South Boston an 18,750-kw. G.E. topping unit is to be added for service in 1942, and in this connection a new Combustion Engineering boiler with a steam capacity of 542,000 lb. per hour at 1,400 psi. and 910 deg. is being installed. A 430,000-lb.-per-hour, 1,400-psi., 910-deg. boiler has been ordered for the second 50,000-kw. unit mentioned above. This is also a Combustion Engineering boiler and is a duplicate of that being furnished with the first unit.

Loads Anticipated Years Ahead

President Frank D. Comerford has stated several times that advance provision of capacity to meet heavy increases in loads due to the defense program and other usage is a keynote of company policy. The extensions authorized in early 1937, and which have been previously covered by ELECTRICAL WORLD, were not based on expectation of defense load, but on the management's belief that at the time the United States, after seven depression years, was on the edge of an industrial boom to offset the shortages of the lean years. In 1939 about 65,000 kw. of additional capacity went into service, including a 25,000-kw. Westinghouse topping unit and two Combustion boilers at L Street, with an increase in boiler capacity at the Edgar station in North Weymouth. The war in Europe and the start of the defense program here stimulated the demand for electrical energy in the company's 600 square miles of diversified territory. The 1940 peak on the Edison system (December) was 330,000 kw.

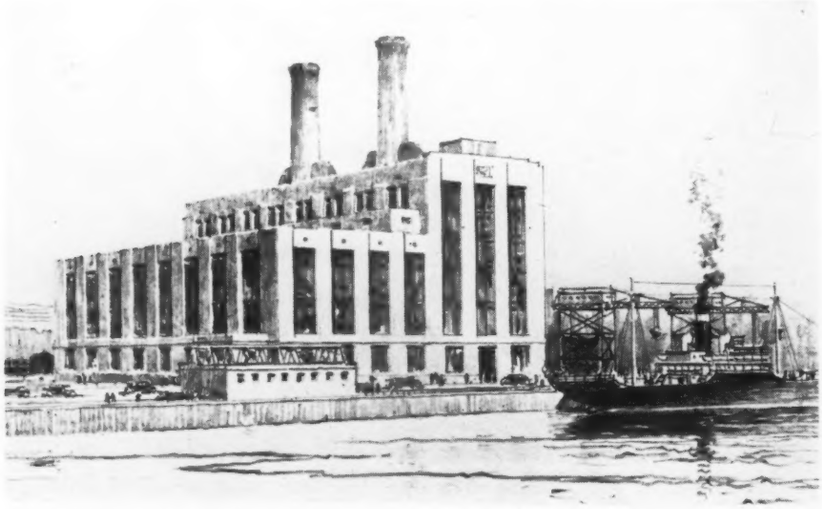
At that time there was available 483,000 kw. of capacity at the company's plants and through contracts with other companies. This 153,000-kw. (46.5 percent) margin has been advantageous in connection with the unusually reduced rainfall in the northeast in the past spring and summer, enabling loads to be carried through transmission to other centers normally utilizing hydro energy. Meanwhile 68,750 kw. in additional steam facilities has been under construction for use next year.

L Street Modernization

The new 18,750-kw. unit and associated boiler at L Street are designed to improve substantially the operating economy of this station on the Boston harbor front. At present the sub-foundation for the new unit is complete, much of the building steel has been erected and the boiler drums have been hoisted into place. This unit will complete the high-pressure topping installation initiated when the boilers and turbine previously mentioned were placed in service in the spring of 1939. The turbine will exhaust into the station's 300-lb. header where it will be utilized further in the generation of energy in the existing large horizontal turbines. Combined with the 1939 high-pressure installation, the 1942 unit will give L Street over 150,000 kw. of capacity with economy comparable to the best modern practice.

The older boilers which were installed to serve the 300-lb. turbines will be available to operate the company's vertical turbines, and thus insure a reliable source of steam for the 96,000 kw. of reserve and peak-load capacity which these machines represent.

Another interesting feature of the new work at L Street will be the control of the induced-draft fan motor by a liquid rheostat. The high-pressure feedwater heater will be designed for heating the water by steam at 300 lb. pressure on one side of the tubes, while on the inside the feedwater will be under a maximum pressure of 2,000 psi. With the completion of the present program L Street will have over 150,000 kw. of modernized capacity, 18,750 kw. of new capacity and more reliable boilers obtained for the reserve and peak-load capacity installed.



NOW UNDER CONSTRUCTION—Architects' drawing of new Mystic plant of Boston Edison Co., foundation work for which has recently started. A 50,000-kw. G.E. unit for this plant was ordered a year ago

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Gun Mounts Ordered from Washer Industry

The Army has given the washing machine industry the job of producing $12,000,000 worth of 50-calibre machine gun mounts in factory space which is idle or soon to become idle due to inability to get materials for normal operations. The entire industry has been certified to the Army by the Contract Distribution Division of OPM for special treatment to relieve priority unemployment (ELECTRICAL WORLD, October 18, page 116).

The contract for machine gun mounts is being written between the Army and three industry representatives—Nineteen Hundred Corp., Apex Electrical Manufacturing Co. and Easy Washing Machine Corp.—which have been designated to receive prime contracts for defense production. These three will divide up the work among the other 31 washing machine producers in accordance with the amount of curtailment each faces.

The Army contract represents the total immediate requirement of the military for machine gun mounts.

Duke Power Ordered to Share Hydro Reserves

Federal Power Commission endeavors to avoid power rationing — Orders 15,000 kw. delivery to Carolina Aluminum Co. and 3,000,000 kw.-hr. weekly to TVA

Federal Power Commission took the final step this week to stave off rationing of power in the Southeast as long as possible by ordering Duke Power Co. to share its water reserves with states whose hydro reservoirs are nearing exhaustion from lack of rain.

The order is the last remedial action which officials can take before decreeing energy rationing to maintain capacity production in aluminum and other essential defense plants. With other contributions of energy from the vast seventeen-state pool pouring power into Georgia, Alabama and Tennessee, it is now believed that rationing can be held off until November 10. This provides a week longer than original estimates, in which heavy rains may materialize.

Emergency Powers

The FPC order, issued under its emergency powers in section 202 of the Federal Power Act, directs that, in addition to continuing delivery of all off-peak energy which Duke has sent into the pool since spring, the company provide: (1) To Carolina Aluminum Co., at Baden, N. C., up to 15,000 kw. for production of aluminum so long as needed energy is not available to the company elsewhere. (2) To Georgia Power Co., at Tallulah Falls, or to South Carolina Electric and Gas Co., for delivery through South Carolina Power Co., lines to Georgia Power at Augusta, all available additional energy in minimum amount of 3,000,000 kw.-hr. weekly between 6 a.m. and midnight on weekdays, for ultimate delivery to Tennessee Valley Authority for aluminum production and other defense load.

The order virtually doubles Duke's deliveries to the pool, but much of the new contribution comes during peak-load periods, whereas previous deliveries were principally off-peak energy. Details were worked out by FPC engineers and the utility prior to the order's issuance; the deliveries were understood to have been put on a formal basis for the protection of the company's legal position and at the request of the state commission.

In addition to the Duke Power contribution to the pool, utilities in the Carolinas, Florida, Arkansas, Kentucky, Louisiana and other states are voluntarily sending more than 30,000,000 kw.-hr. of surplus energy into the drought-stricken states each week. Despite this contribution and full utilization of run-of-river hydro and every utility and industrial steam generator in the area, storage water is being drawn upon heavily to meet power loads in the three worst-hit states.

Power rationing, if and when it comes, will be ordered by OPM's priorities division on recommendation of power coordinator J. A. Krug, and will apply to public and private operations alike throughout the dry area. Mr. Krug is keeping in close touch with the efforts of FPC, with full cooperation from utilities and state commissions, to obtain maximum pooling of facilities both to delay rationing as long as possible and to minimize the severity if necessary.

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Civilian Copper Usage Restricted

Copper is now officially the scarcest of the scarce materials required for defense. Defense officials call it the "ultimate bottleneck" because there is a relatively rigid ceiling on the available supply. This factor, more than any other, was the motivating force behind OPM Priorities Director Nelson's drastic clampdown this week on non-essential uses of the metal.

Electric utilities are virtually exempt from the restrictive provisions of the order which prohibits use of copper in any of more than 100 civilian articles after January 1, 1942, and sharply curtails its use in these articles until that time. Copper as a conductor of electricity is completely exempted from the order. Copper may also be used in generating plants for condenser or heat exchanger tubes and tube sheets "where and to the extent that corrosive action makes the use of any other material impractical."

Tapering Off Period

During the tapering off period between October 15 and January 1 manufacturers of restricted articles will be permitted to use not more than one-half the consumption during the last three months of 1940, or one-eighth the total 1940 consumption. In the same period use of copper in unrestricted articles cannot exceed 70 percent of the consumption in the last three months of 1940 or 17½ percent of the consumption during the entire year 1940. These limitations are to be applied by an individual manufacturer to his own production and applied separately to individual products. Contracts with the Army, Navy, Maritime Commission, Panama Canal, Coast and Geodetic Survey, Coast Guard, Civil Aeronautics Authority, National Advisory Commission for Aeronautics, Office of Scientific Research and Development, or for any lend-lease item, are exempted.

Complete list of the prohibited uses of copper is available in Release 1396, OPM Division of Priorities, Washington.

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EHFA Closes Contract

Electric Home and Farm Authority has closed a contract with the Utilities District of Western Indiana R.E.M.C., Bloomfield, Ind. The contract provides that EHFA and the utility will cooperate in financing the sale of electric appliances for use by consumers located on the utility's power lines.

REA GETS COPPER—Portion of 275 miles (23 carloads) of three- and seven-strand copper cable which has been delivered in Texas for $475,000 REA transmission line

New Markets and Service Topics at Conference

Large utility representation at commercial electric cooking conference told of new markets from industrial expansion, joint responsibility for servicing and needs for load analysis

At the fifth annual Commercial Electric Cooking Conference, held at the Hotel Knickerbocker, Chicago, on October 9, under the auspices of the Commercial Electric Cooking Council, more than 100 representatives discussed problems facing equipment manufacturers, commercial electric cooking sales and servicing and the effects of the defense program and priorities on the supply and design of equipment.

After the conference had been opened by Chairman G. B. Koch, Kansas City Power & Light Co., the plans of the Commercial Electric Cooking Council for 1942 were outlined by Paul J. Every, manager. More promotional materials will be made available for use by utilities, he said, in line with the feeling at the conference that promotion of the advantages of electric cooking should be continued.

New Markets

George Catlin, Detroit Edison Co., said that industrial expansion due to the defense program has opened new markets for electric cooking. New food-serving establishments, enlarging of present locations and the serving of increased numbers of meals, to feed the defense workers, give the electric cooking salesman a rare opportunity to increase his sales, Mr. Catlin said.

The problems involved in the servicing of restaurant cooking equipment were the subject of a talk by A. F. Augustine, Indianapolis Power & Light Co. Pointing out that the first consideration in setting up a servicing policy should be the welfare of the customer, he said that no national rule could be set for every utility to follow. In the discussion that took place the need for cooperation among utility, manufacturer and dealer in handling servicing was emphasized.

P. M. Alden, Philadelphia Electric Co., told of the need for more facts on the characteristics of commercial cooking load and the customers. He pointed out the wide variation in results being reported by utilities. Tests made by his company on more than 75 installations were described and a summary of the results presented.

George Ousler, Duquesne Light Co., described the successful record of his company in selling commercial electric cooking service. After pointing out the increased revenues secured through promotion of this business, he emphasized the importance of coordinated direct selling and advertising in securing the best results.

M. H. Hicks, Carolina Power & Light Co., discussed the progress made in selling electric cooking service to hospitals, schools and other institutions. While sales of this type may require more time and work than small counter type installations, he said, once sold they are far less likely to change to other fuels, and such installations carry with them prestige that can be used to good advantage in testimonials, etc.

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Venice Turbine in Operation Shortly

Shipment of parts for the new 40,000-kw. Allis-Chalmers turbine for Venice No. 2 plant of the Union Electric Company of Illinois were begun during the second week in October, officials of the utility announced last week. Shipment of the machine is expected to be complete within 30 days and in operation around December 15, with the second 40,000 kw. following it into operation about February 15, if on schedule.

Construction of an auxiliary steam line from the boilers of Venice No. 2 station to the generators of Venice No. 1 is approaching completion and is expected to make 20,000 kw. of generating capacity available at that Venice No. 1 by November 15—about a month before operation of the first Venice No. 2 unit. This capacity, coupled with the abundant water available at Keokuk and Bagnell dams, may be expected to relieve somewhat the load now being carried on reserve units of the St. Louis system.

Since construction was started on the $30,000,000 Venice No. 2 plant the progress of work has been impeded by sixteen jurisdictional strikes ranging in length from three days to 26 days in length, it was stated in St. Louis. The latest, which was settled in mid-September, involved a dispute between millwrights and boiler makers over the setting of condenser tubes, it was said.

In addition to the two 40,000-kw. units previously mentioned an 80,000-kw. unit is scheduled for addition to the new Venice plant by late 1942 and a second 80,000-kw. unit by the fall of 1943. With the 25,000 kw. released at the Ashley Street plant by a boiler modernization program last year, the 240,000-kw. Venice station increases the generating capacity of the Union Electric Co. system 40 percent by 1943, it was stated.

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Large Substation Ready at Green Bay

With final tests being completed at the 20,000-kw. substation at Green Bay the only remaining factor in the linking of the Wisconsin Public Service and Wisconsin-Michigan Power Co. generation and transmission systems is actual purchase of power by either system.

This newly completed link forms a power system bond between the major utilities of all but the northernmost sections of Wisconsin. It effectively joins all the major hydro and steam generating stations of the state and completes a huge statewide grid capable of pooling 90 percent of the power facilities of Wisconsin it is reported.

The new substation, located at the Bayside plant of the Wisconsin Public Service Corp. at Green Bay, cost $200,000, of which $190,000 is for the substation and equipment and $10,000 for a tie-line with the nearby towers of the Iron Mountain to Milwaukee 132,000-volt line. This cost will be shared equally by the two utilities.

The 30,000-kw. generating unit now being added at the Wisconsin Public Service Bayside plant at Green Bay will bring further significance to the present tie between the two companies as it will increase the amount of energy available for exchange.

Other connections between systems at present planned for 1942 call for the linking of the Wisconsin Gas & Electric and Wisconsin Public Service lines near Elkhart Lake and New Holstein, to permit the exchange of up to 3,000 kw., and the connection of Wisconsin Power & Light lines at Fond du Lac with those of the Wisconsin Public Service Corp. at Oshkosh, to effect a possible 15,000-kw. interchange of power.

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Port Washington Heat Rate Continues Downward

Average net heat rate for Port Washington station of Wisconsin Electric Power Co. for the first nine months of 1941 was reported last week by Vice-President G. G. Post to be 10,597 BTU. per kilowatt-hour. Average net heat rate for the twelve months of 1940 as reported in ELECTRICAL WORLD of August 9 was 10,729 B.t.u. per kilowatt-hour.

President Comments on Public Power

President Roosevelt moved twice in the last week to advance the cause of public power.

In a press conference the President indirectly blessed Plan 9 for a municipal distribution system in San Francisco to distribute Hetch Hetchy power. Plan 9 goes before the voters next month; eight previous municipal operations proposals have been defeated. The President, referring to statements that an attempt will be made to amend the Raker Act to permit distribution of Hetch Hetchy power by a private company under lease agreement with the city, said he doubted whether any prudent Congress or Administration would release the city from its obligations. In effect, the statement is an attempt to close the door to anything except outright municipal operation.

A day later the White House released a letter the President wrote O. S. Warden, president of the National Reclamation Association, stating that power potentialities would be the determining factor in deciding what public works are to be initiated during the war. Where multi-purpose projects have considerable power possibilities, they will be scheduled now to provide defense energy; projects which are primarily flood control or reclamation or navigation will be delayed.

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Homes for Defense Plan Discussed in Jersey

The importance of the electrical job in home building and the value of the industry's wide experience in promoting wiring in the low-cost field was emphasized in an address given by A. E. Schanuel, field representative of the National Adequate Wiring Bureau, before 200 members attending the ninth annual convention of the New Jersey Council of Electrical Leagues at Atlantic City, October 10-12.

Mr. Schanuel pointed out that in the new, rapidly developing homes-for-defense program the New Jersey area would account for a sizable portion of the nation's new home construction. Briefly outlining the changes that have taken place in home financing during recent years, as contrasted with mortgage plans of the '20s, he referred to many meetings that have been sponsored by local adequate wiring bureaus and leagues at which the wiring adequacy story was presented to prominent bankers and building and loan men in terms of their special interest in safeguarding their loans over the 15- to 25-year amortization periods.

WIND POWER UNIT DELIVERS 800 KW.—The 1,000-kw. experimental generating unit on Grandpa's Knob, Castleton, Vt., which has attracted world-wide attention as the pioneer all-metal turbine set for producing electrical energy from wind power, delivered 800 kw. during initial operations this week. Prominent engineers at site (l. to r.) Grant Voaden, assistant chief engineer of project; Stanton D. Dornbirer, erection superintendent; Palmer C. Putnam, inventor and project engineer; George A. Jessop, chief engineer, all of S. Morgan Smith Co.; Dr. John B. Wilbur, chief engineer of project for S. Morgan Smith Co., and head of structural division, department of civil engineering, Massachusetts Institute of Technology

Wind Power Unit on Service Test

At 6:56 o'clock Sunday evening, October 19, the pioneer wind-power generating unit on Grandpa's Knob, Castleton, Vt., was phased into the Central Vermont Public Service Corp. system, marking the first known delivery of energy produced in this way to an a.c. central station power line. Synchronized operation continued for two hours, during which a maximum output of 800 kw. was delivered, the wind velocity indicated by the anemometers at this load being 26 m.p.h.

Energy generated at 2,300 volts, 60 cycles, is transformed to 44 kv. for delivery to the Central Vermont system. The generator speed is 600 r.p.m. and the two propeller blades driving the mechanism have a wingspread of 175 ft., the equipment being mounted on a tower about 110 ft. high on a mountain summit about 2,000 ft. above sea level. A preliminary description of this development, which represents an outlay of about $500,000 for experimental determination of the commercial possibilities of wind-power units of this general character, was published in ELECTRICAL WORLD, April 5, 1941, page 77. This cost figure, of course, bears no relation to the cost of subsequent wind-power units if proved successful as adjuncts to utility or other systems. Experimental operation on the above commercial power system is continuing. The generator is rated at 1,000 kw. and the present design provides for energy production throughout a range of wind velocities between 18 and 60 m.p.h.

Synchronizing of the wind-power unit into the Central Vermont line was done by William Bagley, General Electric switchgear specialist. Among the engineers present were Dr. J. B. Wilbur of the Massachusetts Institute of Technology, chief engineer of the project; G. A. Voaden, assistant chief engineer, and test engineer S. Morgan Smith Co.; Ernest Stumpf of the latter organization; Christopher Holly and Stephen Haynes, M.I.T.; G. A. Jessop, chief engineer, and S. D. Dornbirer, erection superintendent S. Morgan Smith Co.; John Lasley, erection superintendent American Bridge Co.; Harold L. Durgin, chief engineer Central Vermont Public Service, and Palmer C. Putnam, inventor of the wind-turbine unit.

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Sells System to City

Iowa Public Service Co. has sold its electrical distribution in Graettinger to the city, price including all lines, poles and transformers being $16,250. A municipal electric plant was authorized by voters last spring in a special election and bonds totaling $100,000 are to be sold to finance construction.

Lighting Men Study Air Raid Protection

Experiments now being carried on in lighting for American cities during air raids may lead to peacetime improvements for emergency protective lighting, switching and wiring and street lighting, S. G. Hibben, Westinghouse Lamp Division, told members of the New York section of the Illuminating Engineering Society at their first meeting of the 1941-1942 season in New York City last week.

Mr. Hibben's comments, read in his absence by D. W. Atwater, also of Westinghouse, followed a discussion on "Blackout versus Glare Barrage," presented by Kirk M. Reid, General Electric, Nela Park; Major R. P. Breckenridge, Fort Belvoir, Va., and Prof. G. S. Timoshenko, University of Connecticut, who have been conducting tests.

Three possible methods of protection involved complete blackout, modified lighting during raids, or "dim-out," and "light barrage," explained Patrick Quilty, New York City's Commissioner of Water Supply, Gas and Electricity, in introducing the discussion. The problem, he added, was still unsolved.

The next New York section meeting will be held November 13 at the Westinghouse Lamp Division, Bloomfield, N. J., when lighting for defense—inside and outside plants—will be discussed.

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PEA Equipment Committee Meets

A mild epidemic of open or insecure connections disclosed by present loadings of tap-change and, particularly, banked transformers, was sensed at the two-day meeting of the electrical equipment committee of the Pennsylvania Electric Association in Baltimore last week. Intensified inspection and ammeter readings of current division were the remedies mentioned for these hidden conditions. A broken silver-soldered field connection in a 20,000-kw. machine at Kingston was repaired in place in seven days, reported O. E. Matter.

Some skepticism about reliance on power-factor tests of transformer oil condition centered about reports of instances as crucial as rusting through of tanks from the inside and even of presence of water in sealed-atmospheric units. Shortening of fuller-board barriers in one instance stopped the "wicking" of bottom water up into the coils.

A 53-ft. length of Corprene gasket was inserted in the recessed cover-joint of a 230-kv., 42,000-kva., single-phase transformer at Safe Harbor by jacking the 8½-ton cover up 4½ in. by means of angle-iron extensions and wood columns. F. I. Morgan said the job took ten hours. Freezing point for outdoor switch oils was found in another area as high as 10 to 15 deg. F. Treatment (under license) with about ½ percent of Paraflow lowered the freeze point to −20 deg. F. Discussion of transformer-oil reclamation disclosed confidence on the part of some that collection and haulage to central treatment would not be prohibitively costly.

Oil vapor carried by cooling air from the labyrinth seal into the windings of a Safe Harbor hydro-alternator was partly corrected by installation of a deflector-collar on the shaft above the thrust-bearing oil pool. Internal pressures were favorably modified by means of a fan and a Shutte-Koerting vapor-aspirator device, stated C. E. Lewis.

Loud-speaker communication, already installed at Twin Branch and ten other Eastern stations, was described and demonstrated by K. J. Hovey of R.C.A. Manufacturing Co. as a means of transmitting prompt and intelligible orders to all keypoints in power house emergencies. In one instance failure of a feed pump was reported, manual control initiated and the trouble cleared in 43 seconds, before drum level got dangerously low. Gain is built up to override the typical noise level of 110-115 decibels in power houses.

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Plans New Installation

B. C. Electric Railway Co. is planning installation of an additional generating unit in its power plant on Lorne Street at Kamloops, B. C.

MEETINGS

National Electrical Manufacturers Association—Annual meeting, Waldorf-Astoria Hotel, New York, N. Y., October 27-31. W. J. Donald, managing director, 155 East 44th St., New York, N. Y.

National Research Council—Conference on Electrical Insulation, annual meeting, Williamsburg, Va., October 30-November 1. Thorstein Larsen, secretary, Consolidated Edison Co. of New York, 55 Johnson Street, Brooklyn, N. Y.

Pacific Coast Electrical Association—First fall joint meeting, Fresno, Calif., November 6-7.

International Association of Electrical Leagues—Sixth annual conference, Raleigh Hotel, Washington, D. C., November 12-14. O. C. Small, secretary, 155 East 44th St., New York, N. Y.

American Society of Agricultural Engineers—Fall meeting, Stevens Hotel, Chicago, Ill., December 1-3. Raymond Olney, secretary, St. Joseph, Mich.

Exposition of Chemical Industries—Grand Central Palace, New York, N. Y., December 1-6.

American Institute of Electrical Engineers—Southern district, St. Charles Hotel, New Orleans, La., December 3-5; winter convention, New York, N. Y., January 26-30. H. H. Henline, national secretary, 29 West 39th St., New York, N. Y.

National Association of Manufacturers—Congress of American Industry, Waldorf-Astoria Hotel, New York, N. Y., December 3-5.

Petroleum Electric Power Association—Annual conference, Baker Hotel, Dallas, Tex., December 4-5. K. K. Kreamer, Petroleum Electric Power Association, Houston, Tex.

Gas-filled Cable for Defense Loads

Low-pressure gas-filled cable combines the advantages of oil-filled cable with the simplicity of solid-type cable and offers a new means for safeguarding power supplied to defense industries, V. A. Sheals, assistant cable design engineer of General Electric Co., told a joint meeting of the A.I.E.E. and the Louisiana Engineering Society in New Orleans, this week.

The gas-filled cable, according to Mr. Sheals, is housed in a lead sheath filled with dry nitrogen at a pressure of between 10 to 15 psi. Any damage to the cable sheath sufficient to cause a leak lowers the pressure and sets off an alarm at the power station. The leak can then either be investigated immediately and repairs made to avoid service failure or, if the leak is small, additional gas can be fed into the cable from standby high-pressure cylinders and repairs postponed until a more convenient time, he said.

Mr. Sheals said that the cable's logical field of application is for important tie lines and feeders at voltages from 10 to 40 kv.

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I.E.S. Group Elects

Rene G. Maurette, lighting design engineer, Hygrade Sylvania Corp., Ipswich, Mass., has been elected chairman of the New England section of the I.E.S. Ellery H. Raddin, Lynn, Mass., was elected vice-chairman and C. Irving Dwinnell, Cambridge, secretary. The board of managers consists of Paul Manchester, Pawtucket, R. I.; Prof. Roland G. Porter, Northeastern University; Francis J. Powers and C. M. Snyder, Boston.

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Water Systems Awards

The Rural Service Department of Appalachian Electric Power Co., Bluefield, W. Va., division, received the first award of $150 for the best report on the promotion and sales of electric water systems, from February 1 to July 31, 1941, in a contest sponsored by the Electric Water Systems Council. The company's entry was submitted by L. L. Koontz, rural supervisor.

Second award of $75 went to Wisconsin Electric Power Co., Milwaukee, Wis., whose report was compiled by A. B. Barfield, rural sales supervisor; third award, of $50, to the Central New York Power Corp., Syracuse, N. Y., R. G. Harvey, rural service manager; fourth award, $25, to Puget Sound Power & Light Co., Seattle, Wash., R. W. Clark, merchandising manager.

Sound Engineering
Finest Materials
Efficient Production
Careful Testing

This is why every L-M transformer is a good buy!

LEFT—UP SIDE DOWN TEST ABOVE—CONVEYOR LINE ASSEMBLY

Each year, every customer-preference survey shows that transformers bearing the name "Line Material" are closer to the top of the list.

The definite reasons for this are: Sound engineering, fine materials, efficient production, careful testing — all the factors of design and manufacture to be found in a modern transformer plant . . . These factors make every L-M Distribution Transformer a good buy, regardless of size, capacity, or type.

The illustrations above tell their own story. In addition to the production methods shown here, there are automatic welders for the tanks, infra-red drying ovens for the paint — ample modern facilities which enable us to build transformers as you want them, built to meet your service requirements.

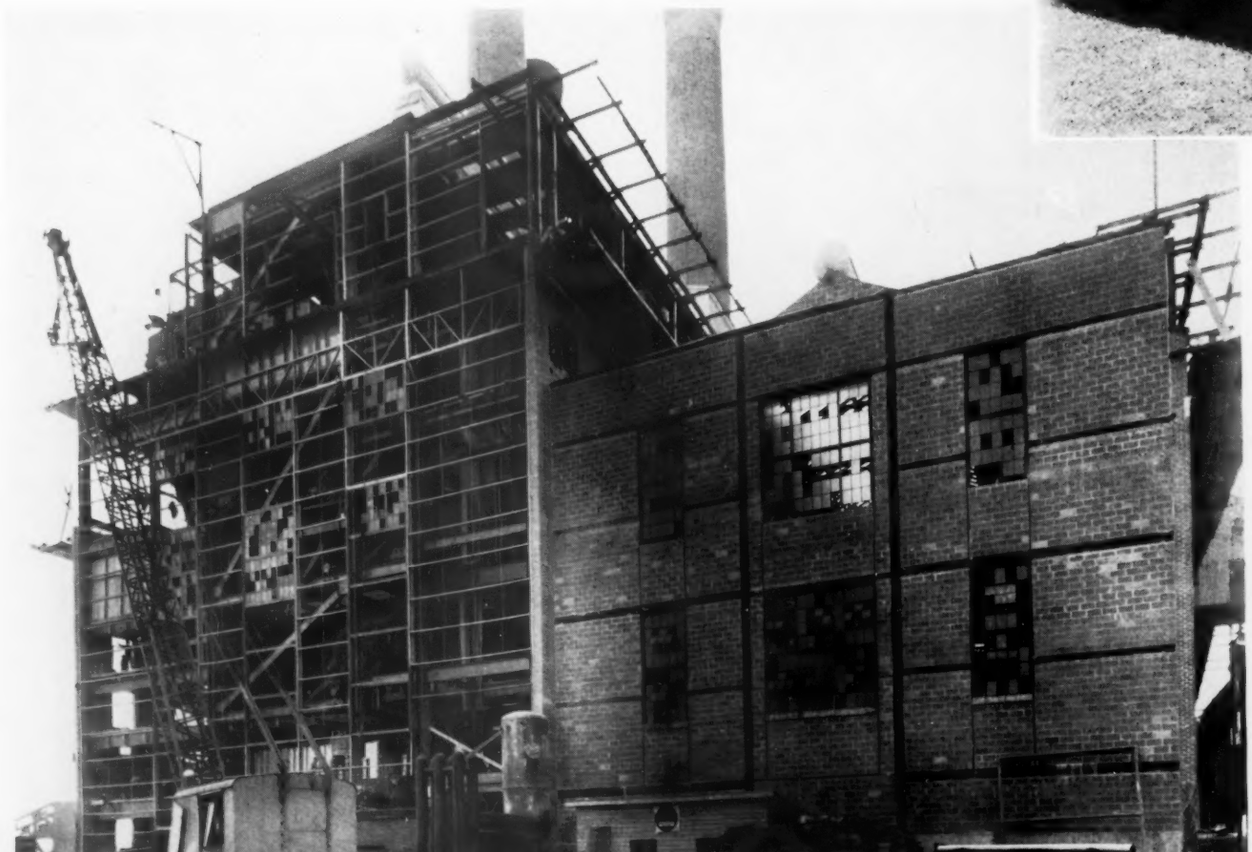
LINE MATERIAL COMPANY

THE IN

IN PR

108,000 KW. GO TO WORK—New general view of progress at Grand Coulee Dam, where the first 108,000-kw. generator was put on the line this month. A second large generator is to be ready for operation in January and a third in 1942. Homes for permanent personnel shown in foreground

MILLENNIUM OF SERVICE—More than of of Central Maine Power is represe up Old Timers Club. Three decades a essed this club, pictured a g a



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EXPAND AT With the of 25,000-kv formers Power & Ford su pera percent. of kva. will 22 cent of the substation y's voltage Day

IUSTRY

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presented up of 41 members of the C. M. P.
les are necessary before employees can join
ed at a meeting at Lakewood, Me.

30 FT.-CANDLES FOR BOEING—A quarter million square feet of ground floor space at the new Boeing Aircraft plant at Seattle is lighted to an intensity of 30 ft.-candles. In the machine shop, shown above, each fixture has two 100-watt fluorescent lamps spaced 16 ft. 8 in. apart on 12-ft. 6-in. centers. Shop is equipped with overhead duct system

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EXPAND TATION—
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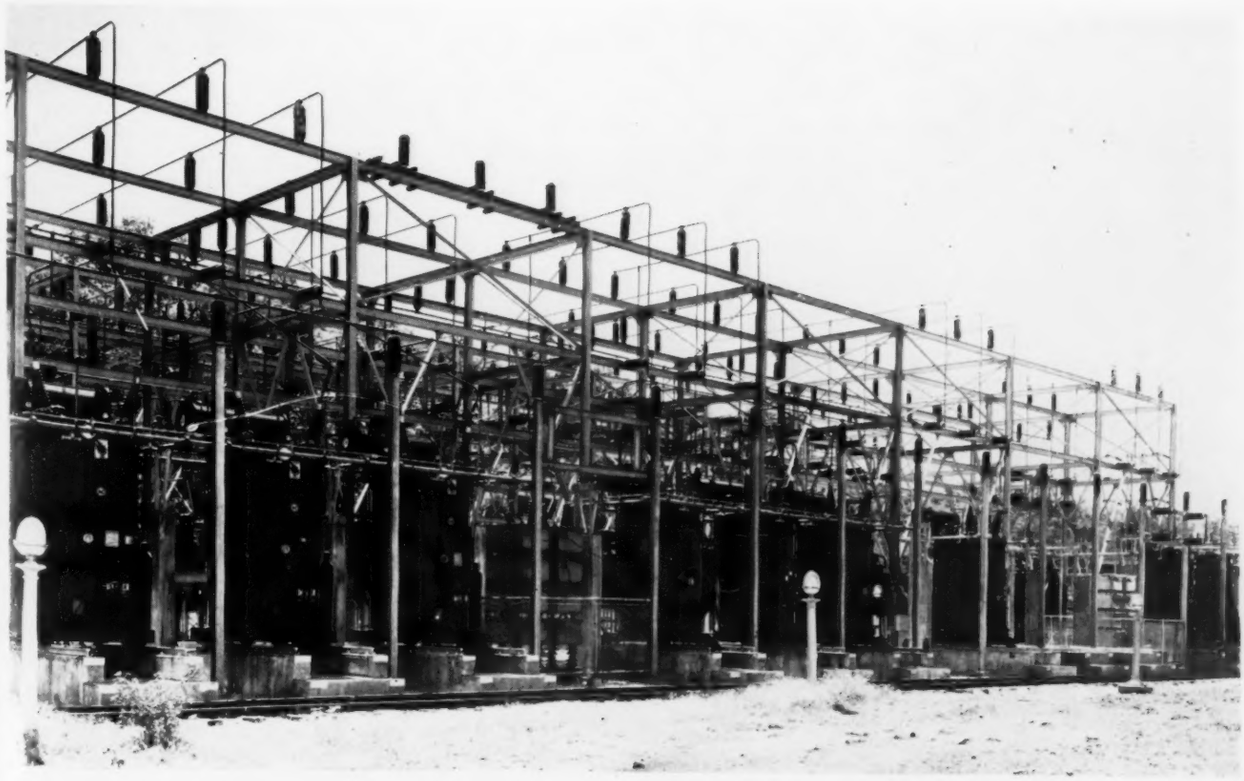


Westinghouse Briefs

. . . Showing the extent of *Westinghouse District Manufacturing and Repair Facilities.* These activities, which result in better service to you and wider use of electricity by your customers, have been encouraged by your purchase of Westinghouse apparatus.

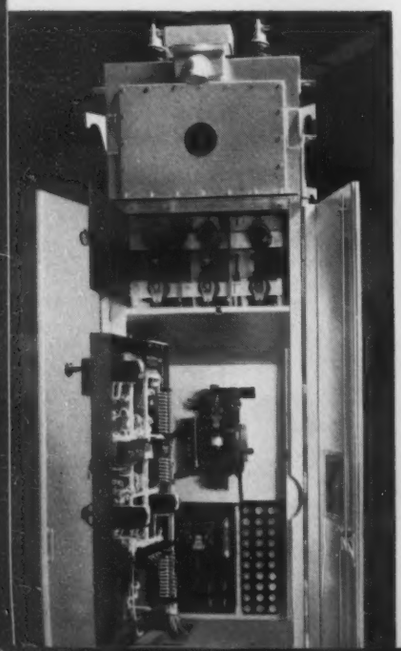
WESTINGHOUSE ELECTRIC & MANUFACTURING CO.
EAST PITTSBURGH, PA.

J-97044

Westinghouse District Mfg. & Repair Plants

34 LIKE THIS—Strategically located throughout the country, Westinghouse plants are serving customers locally in the manufacture and repair of electrical apparatus. Over 3,500 employes are serving our customers through these district facilities.

TAILOR-MADE—With modern equipment, experienced mechanics and ample stocks of parts, Westinghouse district plants are prepared to handle orders for special equipment quickly and efficiently. Shown here is an example of a tailor-made switchgear unit built for a public utility.



TESTED OKAY—Showing a portion of the test floor in a typical district plant. All rebuilt apparatus must pass the same rigid tests as when factory built. No job is ready for delivery until it tests okay and all parts meet required specifications.

READY FOR BIG ONES—Each of the 34 company operated district plants is adequately equipped to handle big as well as small jobs. This main floor view, showing a 10-ton crane with 62-foot span and 28-foot hoist exemplifies the handling facilities.

DISTRICT MANUFACTURING—The design and fabrication of special equipment can often be expedited when our local design engineers work directly with customers' representatives. This picture shows a special switchboard under construction in a district plant.

Columbus Day Causes Drop in Output

The electric light and power industry distributed 3,273,184,000 kw.-hr. during the week ended Saturday, October 18, according to the Edison Electric Institute, a decline of approximately 40,000,000 kw.-hr. from last week, attributable to observance of the Columbus Day holiday.

Effect of the holiday was noted particularly in New England, mid-Atlantic and Central industrial territory, some of the large companies, such as New England Power and Consolidated Edison of New York, losing a full day's industrial output. Last year the holiday occurred on a Saturday and therefore did not affect output as much.

Drought conditions are reflected in New England output, where increases continue below earlier figures of 23 percent, and in the Southern States, which had 21-27 percent increases in August.

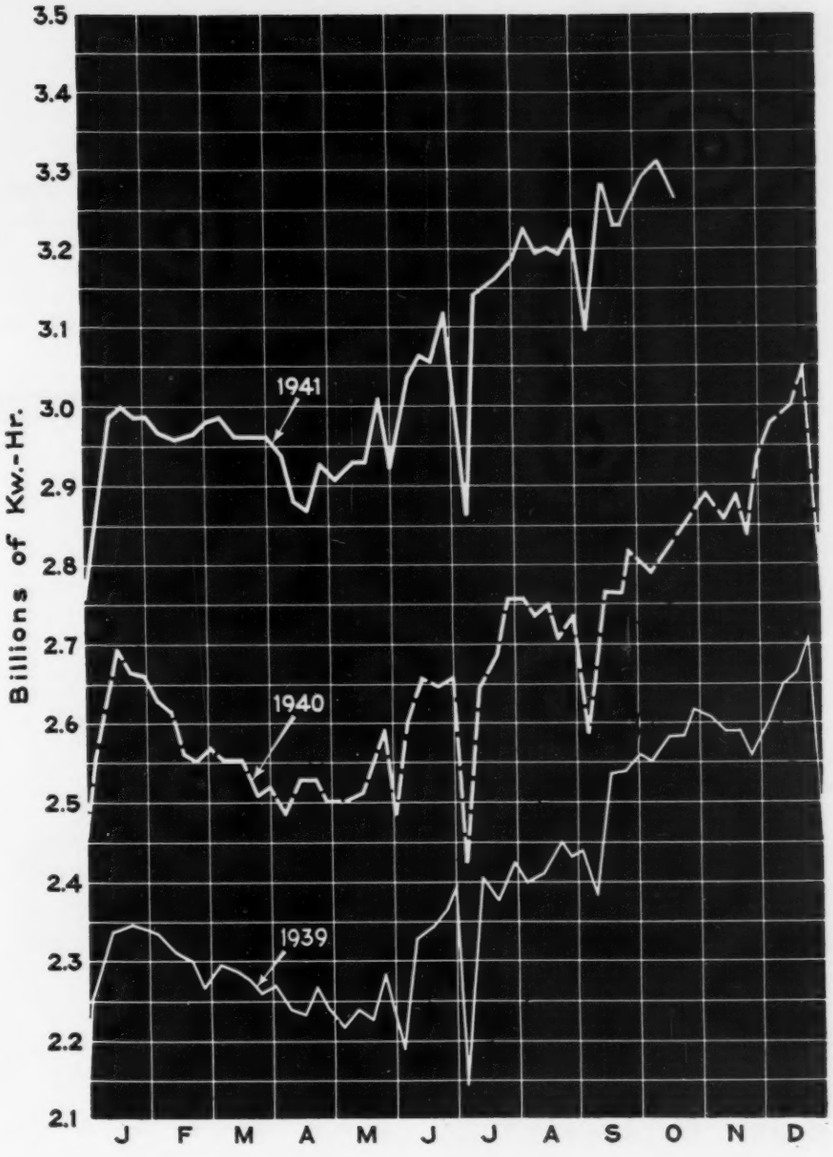
Weekly Output, Millions Kw.-Hr.

1941		1940		1939	
Oct. 18	3,273	Oct. 19	2,838	Oct. 21	2,576
Oct. 11	3,315	Oct. 12	2,817	Oct. 14	2,583
Oct. 4	3,290	Oct. 5	2,792	Oct. 7	2,554
Sept. 27	3,233	Sept. 28	2,816	Sept. 30	2,558
Sept. 20	3,232	Sept. 21	2,769	Sept. 23	2,538
Sept. 13	3,281	Sept. 14	2,773	Sept. 16	2,532

Percent Change from Previous Year

	Week Ending		
	Oct. 18	Oct. 11	Oct. 4
New England	+14.0	+20.7	+19.9
Mid-Atlantic	+12.6	+16.3	+14.8
Central Industrial	+17.8	+19.6	+20.7
West Central	+17.5	+15.7	+16.8
Southern States	+17.0	+19.3	+20.2
Rocky Mountain	+18.4	+20.3	+19.1
Pacific Coast	*+ 9.3	*+10.6	*+10.4
Total United States	+15.3	*+17.7	+17.8

* Percentage should be higher — data under revision.



Energy Output Hits New High in August

Electric energy produced for public use in August, 1941, totaled 14,310,191,000 kw.-hr., the highest production ever reported and an increase of 17.3 percent over production in August, 1940, according to a report issued by the Federal Power Commission in its "Production and Utilization of Electric Energy in the United States" series.

Average daily production of electric energy for public use in August was 500,356,000 kw.-hr., an increase of 3.0 percent over average daily production during the previous month. This is the first time that the average daily production passed the half billion mark. Production by water power in August amounted to 3,910,526,000 kw.-hr., or 27.3 percent of the total output for public use.

The effect of the drought condition is increasingly evident in the reduction of output by hydro plants. The average daily production by hydro plants dropped 10.4 percent from July, 1941, to August, 1941, as compared with a drop of only 5.3 percent during the same period of 1940.

For the twelve months ended August 31, the publication shows, total production was 156,492,000,000 kw.-hr., an increase of 13.4 percent over the similar period of 1940.

The capacity of generating plants in service in the United States on August 31, 1941, totaled 42,689,251 kw., a net increase of 39,863 kw. over generating capacity reported in service on July 31, 1941.

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Peak Load Hits New High

Tacoma City Light officials recently reported that a peak load of 102,000 kw., the highest in the history of the municipal utility, was reached on October 1.

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August Coal Consumption Totaled 5,767,037 Tons

Electric utility power plants consumed 5,767,037 tons of coal in August, the Federal Power Commission has reported—an all-time high. Of the total, 5,478,062 tons were bituminous coal, an increase of 4.9 percent over July consumption, and 288,975 tons were anthracite, an increase of 6.0 percent over July consumption, the report said. Fuel oil consumed in August totaled 1,783,283 barrels, compared to 1,616,886 barrels in July, an increase of 10.3 percent.

Total stock of coal on hand at electric utility power plants on September 1, 1941, was 12,269,387 tons. This represents a 4.9 percent increase over the stock on hand August 1, 1941.

NEWS ABOUT PEOPLE

H. L. Crumley Promoted; Ivan Buys Succeeds Him

Howard L. Crumley, formerly superintendent of operations of the Virginia Public Service Co., Alexandria, has been appointed operating vice-president and Ivan Buys has been made superintendent of operations to succeed Mr. Crumley. Mr. Crumley will have direct supervision over the company's operations with headquarters in Alexandria, Mr. Buys over the company's generating, transmission and distribution facilities, with headquarters at Charlottesville.

Like his senior officer, W. E. Wood, president of the company, Mr. Crumley is a graduate of Georgia Tech. With his appointment as vice-president at 41, he becomes one of the youngest utility executives of the South. "We have selected Mr. Crumley as operating vice-president," said Mr. Wood in announcing the appointment, "because of his excellent record since he became connected with the Virginia Public Service Co. and because he is eminently qualified by his experience and ability for the very important task of supervising the operations of the business, which are expanding rapidly because of national defense activities. . . ."

Ivan Buys

H. L. Crumley

Prior to joining the staff of the Virginia company, Mr. Crumley was consulting engineer of the E. M. Gilbert Engineering Corp., Reading, Pa. Following graduation from Georgia Tech he spent one year with General Electric Co. at Schenectady. In 1921 he joined the Georgia Power Co. Four years later he became associated with Metropolitan Edison Co., Reading, serving as a relay engineer, assistant superintendent of operations, chief system operator and assistant superintendent of operations. In 1937 he became consulting engineer to the E. M. Gilbert Engineering Corp. of Reading, specializing in construction, maintenance and operation. He joined the Virginia utility as superintendent of operations in 1938.

A graduate of Cornell University, Mr. Buys joined the Duquesne Light Co. as chief of operations after the World War. In 1923 he was made superintendent of transmission of the Kansas Gas & Electric Co. and in 1930 chief engineer of United Power & Light Corp. of Kansas, and later division manager. In 1936 he was engaged by the Illinois-Iowa Power Co., Decatur, Ill., as chief engineer to reorganize the engineering department. It was from this company that he went to Virginia.

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Texas Utility Elects Persons Vice-President

James T. Persons, chief electric and water engineer of Central Power & Light Co., Corpus Christi, Tex., has been elected vice-president of the company. Mr. Persons has headed the utility's engineering department for the past fourteen years, during which time he has supervised many large construction projects, while bearing responsibility for operations. Prior to his connection with Central Power & Light, Mr. Persons was employed by Texas Power & Light Co. of Dallas for a fourteen-year period.

Mr. Persons took his first job with General Electric Co. at Schenectady. He then went to Des Moines, Iowa, to supervise the underground distribution operation for the Illinois Traction System. Mr. Persons was graduated from the electrical engineering school of the University of Texas in 1911.

N. E. Power Association Executives Take Office

Carl S. Herrmann, recently elected board chairman of the New England Power Association, Boston (ELECTRICAL WORLD, October 11, page 4), is a native of Worcester, Mass., and after completing his schooling worked with the American Steel & Wire Co. in that city as clerk, typist and stenographer. In 1912 he became associated with the New England Power system companies as a bookkeeper with the Connecticut River Transmission Co., now the New England Power Co. Two years later he became chief accountant, and in the next twelve years played an important part in the financing of the rapidly expanding system. In 1916 he was appointed general auditor, and when the New England Power Association was organized in 1926 he was elected its first treasurer, serving until 1935, when he became president. Mr. Herrmann held this last post until his promotion to the chairmanship.

C. S. Herrmann

Waid

I. L. Moore

Irwin L. Moore, who succeeds Mr. Herrmann as president of the New England Power Association, was born in Hoboken, N. J., and was graduated in 1917 from Cornell University. In 1920 he received a B.S. from the Massachusetts Institute of Technology. His experience since then has been wide and varied, beginning as a rodman in a Deerfield River survey party traversing an area where several of New England Power's hydro-electric plants are now located. Mr. Moore has been a chemist in the U. S. Bureau of Standards, Washington; an engineer for the Aluminum Co. of America; assistant to the general manager of the New England Power Co.; engineering assistant to the president of the International Paper Co., and lately, president of the International Hydro-Electric System.

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▶ W. C. ANDERSON, formerly sales manager of the Electrical Testing Laboratories, New York, N. Y., has been made commercial and industrial manager of the Ohio Power Co., Canton, Ohio.

▶ HARRY J. MAUGER, assistant to the president of Hotpoint (Edison G.E. Appliance Co., Inc.) and chairman of the electric range section of the National Electrical Manufacturers Association, has been granted a leave of absence from these duties, effective October 15, to join the ranks of business executives taking up emergency positions in Washington. For many years an active leader in the electric range and appliance business, he will serve as industry specialist in the division of consumers durable goods, headed by Dr. Bogardus in the Office of Price Administration directed by Leon Henderson. Together with George A. Hughes, now chairman of the board of Hotpoint, Mr. Mauger was one of the pioneers in the electric appliance industry. He helped to form the National Electric Cookery Council.

OBITUARY

▶ JOSEPH INSULL, brother of the late Samuel Insull, died on October 12 at his home in Springfield, Mass., after a long illness. His age was 83. He was born in London and spent most of his life in the electrical manufacturing field. From 1903 to 1928 he was assistant general manager of the General Electric Co.'s Pittsfield plant. He retired in 1928.

▶ ELMER F. ANDERSON, electrical engineer with Portland General Electric Co., Portland, Ore., died on October 4, following a brief illness. Mr. Anderson obtained his early engineering training with the General Electric Co. in Schenectady. He then joined the engineering department of Portland General Electric Co., with which he had been associated ever since. He was an active member of the American Institute of Electrical Engineers and the Northwest Electric Light and Power Association.

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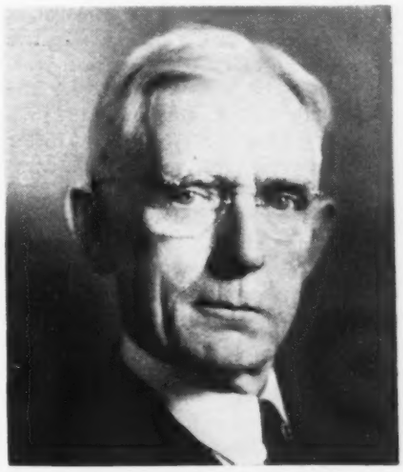
C. W. Kettron

Charles W. Kettron, retired president of the Illinois Electric Porcelain Co., Macomb, Ill., died in that city on October 11, in his eightieth year. Mr. Kettron devoted practically all of his life to the pottery ware business. He was born at Lebanon, Ind., in 1862, and in the early 80's went to Macomb to work at his trade as a potter. In the fall of 1883 he started work for the Macomb Pottery, advancing to the position of superintendent and later becoming secretary of the company.

In 1905 he built the pottery plant, which was sold the following year by his company to the Western Stoneware Co.



This company still operates the plant. In 1910 Mr. Kettron organized the Illinois Electric Porcelain Co. and served continuously as its president until the past summer, when he retired from the presidency to assume the chairmanship of the board. Mr. Kettron was prominent in Macomb's business and civic life for many years.

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▶ CHARLES S. STRAW, assistant general solicitor of Public Service Corp. of New Jersey, died, of a heart attack, on October 16 at his home in Berlin, N. J., after a week's illness. He was 49 years of age. At the news of his death the New Jersey State Public Utility Commission, before which he had frequently appeared, adjourned its calendar for the day. Mr. Straw joined the claims department of the Public Service Corp., was transferred to the law department in 1926 and became assistant general solicitor in 1927.

MANUFACTURING-MARKETS

Tax Increase Limits G.E. Profits in '41

Although federal income and excess profits taxes for the first nine months of 1941 were more than three times those of the similar period last year—$82,000,000 compared with $26,900,000 in 1940—earnings of the General Electric Co. equaled those reported last year. Profit available for dividends for the nine-month period amounted to $37,471,681, compared with $37,094,776 for the same period last year. These earnings were equivalent to $1.30 and $1.29, respectively, a share of common stock.

Net sales billed by the company during the first nine months exceeded the billing for any previous full year, amounting to $474,017,608, compared with $287,249,930 for the same period last year, an increase of 65 percent.

Output of equipment known to be for defense purposes is increasing rapidly, Charles E. Wilson, president, stated, and during the first nine months of this year the billing of such equipment increased more than 250 percent over that for the same period last year.

A dividend of 35 cents a share of common stock is payable on October 25, making a total of $1.05 a share in dividends for the first nine months of this year, the same as was paid for the corresponding period of 1940.

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Emerson Electric Will Start Making Turrets

Production of power-operated aircraft gun turrets will start this month at the Emerson Electric Co.'s new plant on Florissant Road in St. Louis County, Mo., W. Stuart Symington, president of the company, announced in a recent letter to stockholders. The letter revealed that the company now has on hand orders for turrets amounting to approximately $28,000,000.

The plant is being constructed with a $10,529,172 government loan authorized by the DPC. Only the first unit will be in operation this month. The entire plant will be ready for operation in February.

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Issue Third Quarter Earnings Reports

Johns-Manville Corp. reports for the nine months ended September 30 a consolidated net income of $4,488,984 after all charges. This is equivalent to $4.97 a share on the 850,000 shares of common stock after allowing for preferred dividend payments. In the first nine months of last year the consolidated net amounted to $3,526,325, or $3.72 a common share.

Earnings before income and excess profits taxes were $12,853,631 in the nine-month period this year, in contrast to the $5,785,036 earned on the same basis in the 1940 period, an increase of 122 percent. Provision for income and excess profits taxes amounted to $8,364,647, or 270 percent over taxes of $2,258,711 for the nine-month period a year ago.

Among the other manufacturing companies reporting earnings are the following:

ROME CABLE—September quarter, net profit, $121,648, equal to 64 cents each on 189,830 shares of capital stock, against $120,734, or 64 cents a share in preceding quarter and $100,755, or 53 cents a share, in September quarter of 1940. Six months to September 30: net profit, $242,382, after $345,991 provision for Federal income and excess profits taxes, equal to $1.28 a share, compared with $161,325, or 85 cents a share, for six months to September 30, 1940, after tax deductions of $63,706. Company's fiscal year ends March 31.

WORTHINGTON PUMP & MACHINERY—Including domestic subsidiaries, nine months ended September, net profit $2,081,672, after reserve for all federal taxes, equivalent, after dividend requirements on the preferred stocks to $5.93 a share on 265,985 shares of common stock, comparing with $1,543,473, or $4.12 on 250,665 common shares earned in the first nine months of 1940.

Orders Equipment for Parker Dam

Power equipment for substations on Parker Dam transmission lines in Arizona and California has been recently ordered by Secretary of the Interior Harold L. Ickes.

Four contracts were awarded totaling $443,115 for furnishing transformers, lightning arresters and other equipment for the Gila, the Drop No. 4 on the All-American Canal, the Tucson and the Coolidge substations. These substations are for two additional Parker Dam transmission lines now under construction.

Allis-Chalmers Manufacturing Co. on its bid price of $290,517 will furnish four transformers for the Gila substation, one for the Drop No. 4 substation and one regulator for the Coolidge station.

Westinghouse Electric & Manufacturing Co., for a price of $76,054, will furnish twelve transformers of varying voltages for the Gila substation, six for the Tucson substation, four for the Drop No. 4 substation and three for the Coolidge substation; also three lightning arresters for the Gila substation and one each for the Drop No. 4, the Tucson and Coolidge substations.

General Electric Co., on its bid of $53,924, will furnish two oil circuit breakers for the Gila substation. Pacific Electric Manufacturing Corp., San Francisco, on a bid of $22,620, will furnish four oil circuit breakers for the Gila substation and one for the Tucson substation.

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Orders Generators for Keswick Plant

Three 25,000-kw. generators have been ordered by Secretary of the Interior Harold L. Ickes for the Keswick power plant on the Central Valley project in California. General Electric Co. will furnish these three generators on its bid of $975,800.

Construction of Keswick Dam, second power dam on the Sacramento River, began with an award of contract in August of this year. Three 34,600-hp. hydraulic turbines and three oil pres-

sure governors were ordered in September. With these generators all essential power equipment for the three units which will have a total installed capacity of 75,000 kw. has been ordered.

Added to Shasta Dam's plant capacity of 375,000 kw., the Keswick plant will bring to 450,000 kw. the total installed capacity of power plants on the Central Valley project. This power is expected to be available late in 1943 or early in 1944.

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Sangamo Gets Defense Awards; Raises Wages

Sangamo Electric Co. has announced the receipt of a new defense contract award of $630,000 from the Chicago Signal Corps procurement office calling for construction of special equipment. The new contract supplements a $300,000 award received recently from the bureau of ships of the Navy Department.

A voluntary wage increase of 6 percent for more than 1,200 factory employees, representing an annual added expenditure of $108,000, has been announced. The increase is retroactive as of September 15. Officials said that the move was instituted because of the rising cost of living.

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Utilities Not Affected

A revised and much broader repair and maintenance priority plan available to practically all industry was issued by Priorities Director Donald M. Nelson on October 16. This order, known as P-22 (Amended) does *not* apply to utilities, which still are to use the provisions of the P-46 order for obtaining necessary materials for maintaining operations.

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Offer Bond Purchase Plan

A plan to encourage the more than 73,000 employees of the Westinghouse Electric & Manufacturing Co. to save for future needs and at the same time serve their country by purchasing defense saving bonds through voluntary payroll deductions has been announced by G. H. Bucher, president.

New York Metal Prices

	Oct. 22,'41 Cents per Pound	Oct. 14,'41 Cents per Pound
Copper electrolytic	12.00*	12.00*
Lead, A. S. & R. Price	5.85	5.85
Antimony	14.00	14.00
Nickel, Ingot	35.00	35.00
Zinc Spot	8.25	8.25
Tin, Straits	52.00	52.00
Aluminum, 99 percent	15.00	15.00

* Delivery Connecticut Valley.

Field Reports on Business

Business activity held fairly steady during the past week, with an increasing percentage of output consisting of defense products. The supply of consumers' goods in relation to demand will of necessity be limited. Retail trade continues active, with substantial gains over last year reported.

CHICAGO

Business activity held fairly steady last week with gains in industrial fields offsetting losses in other lines. The transition to all-out defense is curtailing consumer goods production, causing job dislocations and increasing living costs. Retail trade has declined steadily from the September boom, but still remains approximately 17 percent above a year ago.

Strenuous efforts are being made in this district to alleviate the pressure on small companies by securing defense work and easing the material shortages. More than 3,000 business men from the Middle West will meet at a three-day defense production clinic this week to secure sub-contracts from large companies having prime contracts. Hundreds of manufacturers in the larger cities in this area have set up organizations to spread sub-contracting by "pooling" facilities. Four of these units have already been approved by OPM. The Chicago Building Congress has set up an advisory committee to work with OPM because the present material situation is so critical it threatens to cause complete dislocation of building in this area.

All previous records for the sale of air-conditioning systems were broken in the first nine months of this year. A total of 406 central-plant systems aggregating 12,267 hp. were installed as compared with 347 totaling 7,571 hp. during the same period last year. In the same period 1,582 room coolers were sold as against 985 units in 1940.

Defense contracts awarded in Illinois last week included the following orders for electrical equipment: American Automatic Electric Sales Co., switchboards and telephones, $231,844; Small Motors, Inc., dynamotor units, $109,005; Cook Electric Co., miscellaneous equipment, $31,901; The Okonite Co., cable, $115,045; Oak Manufacturing Co., switches, $21,759.

PACIFIC COAST

Schedule prices, steady until recently, have again advanced and twist lock and heavy polarity devices are now ranked with top-flight priority items, such as rubber-covered wire in all sizes and styles. Except for such scattered groups Western deliveries of electrical material are fair, but private building has markedly decreased, first, because of non-electrical shortages and, second, because of growing public fear of non-deliveries of key material .

As an index of defense supply purchasing the 9th Army Corps, buying through San Francisco, increased 550 percent for nine months over last year. New Navy construction includes a $2,250,000 hospital at Long Beach with its $60,000 power plant; a $1,000,000 sectional base on Yerba Buena Island in San Francisco Bay; $100,000 of electric generating equipment for San Diego submarine base; five bridge cranes, value $86,500, for Oakland base, and a $42,000 shipment to Pearl Harbor of G.E. transformers and substations. The Army will build a 30,000-troop camp near Bozeman, Mont., costing $22,800,000, similar to such now under construction at Medford and Corvallis, Ore., and Marysville, Calif.

Recent orders include 27 Pacific Electric 600- and 1,200-amp. disconnect switches, costing $33,641, for Bonneville; a $121,810 generating plant for University of California Hospital; $319,277 to Bethlehem for steel towers for its Bonneville Vancouver sector, and $10,707 for an 8-ton gantry crane for Kennett plant. Low basic bid for Los Angeles 185-unit housing, its tenth project, was $386,931, as compared with $24,952 for the low electrical bid.

NEW YORK

Industrial activity has held at a high level during the first half of October, with gains in defense output offsetting declines in certain civilian goods.

While retail sales of major electrical appliances have slowed down since the excise taxes went into effect on October 1, the industry does not know how much of the curtailment should be attributed to the seasonal factor and how much to the higher prices. The last four months of the year are normally very slow.

Use of copper as a component in more than 100 types of civilian articles will be restricted by 40 percent for the rest of the year and prohibited after January 1, according to an order issued by OPM this week.

While the full impact of the defense program upon non-essential industries may cause unemployment to as many as 2,000,000 workers, government officials have expressed the opinion that the period of idleness will only be temporary.

NEW ENGLAND

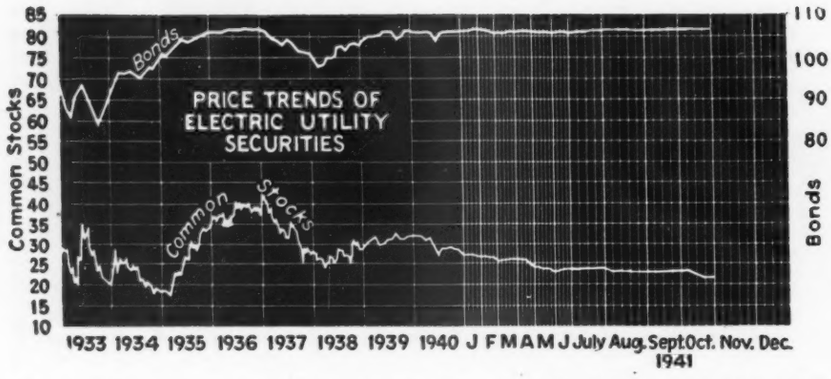
Plans for increasing power generating capacity are moving ahead in this district. Lynn Gas & Electric has bought a G.E. 20,000-kva., three-phase, 13.8- to 23-kv. transformer for tie-line service. Bookings for switch and control apparatus are heavy and pole line materials are in good demand.

Increase in industrial plants requiring additional electrical equipment are encouraging. Recently a prominent bottling works completed the installation of four mixing vats using 160 hp. in motors and 131 kw. in fluorescent and incandescent lighting. The Hylite Corp., Boston, has installed a 22-kva. Taylor-Hall spot-welder and a 25-kw. infra-red apparatus in its new plant. B. F. Sturtevant Co. has received a contract for 120 auxiliary steam turbines for driving pumps on U. S. Navy cruisers.

Defense contract awards in this area continue at a steady pace. Holtzer Cabot Electric Co. has sold $142,560 worth of invertors; Lundquist Tool & Mfg. Co., Worcester, has been awarded a $96,509 contract for switch plates and control boxes, and Raytheon Manufacturing Co., Waltham, Mass., has received an order for rectifiers amounting to $18,900. Small motor sales to manufacturers of equipment and machinery for government disposition are active; telephone apparatus, receiver tubes, terminal strips, small switches and communication apparatus are in demand.

Residential building for the first nine months in Massachusetts increased 37 percent as compared with 1940. Domestic electric range sales in Connecticut for first eight months are double the 1940 volume.

Utility Stocks Decline; Bonds Lower


PRICE TRENDS OF ELECTRIC UTILITY SECURITIES
Bonds
Common Stocks
Common Stocks
Bonds
85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10
110 100 90 80
1933 1934 1935 1936 1937 1938 1939 1940 J F M A M J July Aug. Sept Oct. Nov. Dec. 1941

Electric light and power stocks recovered only part of the losses sustained late last week, when the whole list declined. "Electrical World" index, 22.5; last week, 23.0; last year, 28.7. Bonds dipped to 105.7 from 105.8 the preceding week

Tax Privileges for Utilities Studied

Broader special tax treatment for utilities forced to dispose of assets under the Holding Company Act will soon be recommended to the Treasury by the Securities and Exchange Commission. Plans now are to seek incorporation of the changes in the so-called "administrative" tax measure being prepared by the Treasury to correct flaws in the recent revenue measure.

Utilities now can invoke non-taxability clauses of the act for certain exchanges and transfer of property and certain distributions to stockholders under SEC order. Where capital gains are realized through outright sales under the "death sentence," however, many utilities face heavy penalties. Just what proposals will be suggested by SEC have not been worked out, but it is intended to cover this presently uncovered field of "conflict" between the revenue law and the Holding Company Act.

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Plans to Sell Unit

Central United States Utilities Co. has filed an application with the Securities and Exchange Commission disclosing that it proposes to sell its entire interest in Arkansas General Utilities Co., a subsidiary, to Walton, Sullivan & Co. for $325,000.

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FPC Approves Merger

Federal Power Commission has approved the merger of the facilities of the Montana-Dakota Utilities Co. with certain facilities of the Mountain States Power Co. near Baker, Plevna and Ismay, Mont., by purchase of the latter facilities. The commission also authorized issuance by the Montana-Dakota company of an unsecured purchase money note amounting to $95,000 to the Mountain States Power Co. as the purchase price of the facilities.

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N. P. & L. Passes Dividend

Directors of the National Power & Light Co. last week passed the dividend on the company's common stock normally due at this time. National Power has been paying quarterly common stock dividends at the rate of 15 cents a share. Uncertainties as to the outcome of proceedings before the Securities and Exchange Commission involving continued payment of dividends by the Pennsylvania Power & Light Co. to its parent, National Power, were responsible for the action of the directors, it was announced.

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SEC Denies Utility Plea

SEC has denied a request by the Engineers Public Service Co. for a trial examiner's report in the geographic integration proceedings against the system, but agreed to permit requests for specific findings by both the company and the SEC staff. The commission said that the hearing record probably would be closed around October 27, and that within 30 days thereafter the staff should submit its request to the commission. The company then would have fifteen days more in which to file its request.

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Utility Reports

	Net Income 1941	1940
*American & Foreign Pwr. and subs.	$5,695,279	$4,970,209
†Birmingham Electric	320,800	132,106
†Calif.-Oregon Power	1,118,244	908,321
†Central Arizona Lt. & Pwr.	637,913	886,934
†Electric Power & Light and subs.	6,211,872	6,868,325
†Mississippi Pwr. & Lt.	333,577	489,470
†Northwestern Electric	502,925	496,106
†Pacific Power & Light and sub.	342,838	425,583
‡Public Service Corp. (N. J.) and subs.	20,073,309	23,791,261
†Puget Sound Pwr. & Lt. and subs.	1,654,868	1,498,582
†Savannah Elec. & Power	264,117	162,990
†Southern Colorado Pwr.	279,924	217,297

*Twelve months ended June 30.
†Twelve months ended August 31.
‡Twelve months ended September 30.

President Requests AVA Legislation

President Roosevelt, in a letter to Congressman Clyde T. Ellis (Ark., D.), has urged enactment of legislation setting up an Arkansas Valley Authority at this session of Congress. The letter is expected to help those pushing the legislation to get public hearings and floor action for some form of enabling act.

In his letter the President skirted both the question of whether he wanted to see prompt development of the valley under the guise of defense and the bitter issue among New Dealers over the type of administrative control for such a regional agency.

He said he was glad to see that the White and Red Rivers projects which will form the nucleus of an AVA are going ahead. Both are being built by the U. S. Army engineers. Then he added that authorities such as the AVA "can play a vital role in the eventual adjustment to a peacetime economy which the post-war world will require."

On the subject of administrative control, the President revealed that the dispute of centralization of federal power development within the Department of Interior versus a semi-autonomous regional board à la TVA has been put up to the Budget Bureau for "solution."

"You are, of course, aware of the difficult problems involved in reconciling varying points of view toward this type of legislation," the President wrote. "For this reason I am sure that you will appreciate the importance of the careful work which the Bureau of the Budget is doing in reaching a solution which will assure the expediting of these river-basin programs on the soundest possible basis."

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Line to Cost $320,020

South Carolina Public Service Authority, Charleston, S. C., has awarded a contract to Midland Constructors, Inc., Chicago, for construction of a transmission line from Pinopolis hydro-electric generating plant to Bowman, Orangeburg County, at $320,020.

Kentucky Board Chairman Advocates TVA Service

That Kentucky should have the benefits of TVA power and, at the same time, profit by the mistakes made by other states in acquiring it, was the belief expressed by Public Service Commission Chairman John Kirtley upon his return from a 1,350-mile survey of TVA operations in Tennessee, Mississippi and Alabama.

"As a general rule," he said, "I am not in favor of the federal government subsidizing business enterprises. But TVA is here. It is an accomplished fact. Cities in other states are getting the benefit of TVA's cheaper wholesale rates. There is every reason why cities in Kentucky also should receive these benefits."

The ten-day trip, Chairman Kirtley explained, was made at the request of Gov. Keen Johnson and a complete report of his findings will be made to the Governor.

TVA power has been barred from Kentucky by a decision of the Court of Appeals holding cities are without power to delegate rate and management authority to an outside agency.

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California Edison Will Conduct Letter Contest

"What I See Behind My Electric Bill" is the subject of a letter contest being conducted by the Southern California Edison Co. to foster a wider customer appreciation of the benefits of electrical service and the company's position as one of the largest taxpayers in its service area.

Five hundred dollars in prizes will be distributed in 100 individual awards of $5 each. In addition, every one entering the contest receives a free 100-watt Mazda lamp. Entries are limited to 100 words or less. The contest closes October 31.

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Northwest Chemical Unit Gets Bonneville Power

Federally generated Columbia River power began to flow recently into another northwest industry, the Pennsylvania Salt Manufacturing Co.'s plant at Portland, Ore. The $1,000,000 chemical plant has a 50-acre site on the Willamette River downstream from Portland and will engage in the manufacture of national defense and commercial products.

The company has a 20-year contract for an initial demand of 2,000 kw. of Bonneville power.

Sales Opportunities

IOWA FALLS, IOWA—Central States Electric Co., Cedar Rapids, Iowa, is considering extensions in steam-electric generating station at Iowa Falls, with installation of new turbine-generator unit, high-pressure boilers, and auxiliary equipment. Also will enlarge switchyard and make extensions in transmission lines in that area. Estimates of cost are being made.

DAYTON, OHIO—City Railway Co., operating electric traction system, will begin work soon on new power substation for feeder service. Geyer & Neuffer, Ludlow Arcade Building, are architects.

GRAND COULEE, WASH.—Bureau of Reclamation, Denver, Colo., receives bids until November 6 for 230- and 115-kv. coupling capacitors and potential devices, carrier-current telephone terminal equipment, and carrier line traps for 230- and 115-kv. transmission lines for Grand Coulee power plant, Columbia Basin project, Wash. (Specifications 1582-D). Equipment will be installed by government.

ROCHESTER, N. Y.—Symington-Gould Corp., 20 Symington Place, manufacturer of railway equipment, plans installation of motors and controls, duct lines, switchgear, interior lighting system, conveyors, electric hoists and other equipment in new local plant for production of ordnance specialties for government. Cost estimated about $1,255,000, and fund in that amount will be secured through Defense Plant Corporation, Washington, D. C., a federal agency, for project. Work is scheduled to begin at early date.

DALLAS, TEX.—Dallas Power & Light Co. will furnish power supply for new local plant of Standard Brands, Inc., now in course of erection at Maple and Amelia Streets for Fleischmann Yeast Division, and will extend transmission line to plant site, where power substation will be located for step-down distribution service. Cost of installation reported close to $50,000. Standard company, noted, will equip plant throughout for electric operation, including motors and controls, switchgear, duct lines, industrial lighting facilities, conveyors and other equipment. Project will include a series of eight one, two and four-story interconnected structures, estimated to cost approximately $1,000,000.

PAULLINA, IOWA—Municipal Light and Water Works Department receives bids until November 10 for new municipal power plant, including building, 45x78 ft., Diesel engine-driven generator and accessories, switchboard, instruments and complete auxiliary equipment. Buell & Winter Engineering Co., Insurance Building, Sioux City, Iowa, is consulting engineer.

TIFFIN, OHIO—Ohio Power Co., Canton, Ohio, plans radio station at Tiffin, with complete facilities for private broadcasting to company men on motor trucks, lines and other structures and work in company territory.

TROUTDALE, ORE.—Aluminum Co. of America, Inc., Gulf Building, Pittsburgh, Pa., has closed contract with government for construction and operation of new aluminum reduction plant near Troutdale, to be electrically-operated throughout, with power supply to be furnished by Bonneville Power Administration, Portland, Ore. Plant will be constructed in series of three main production units, each comprising a number of one and multi-story buildings; equipment installation will include motor-generator sets, transformers and accessories, switchgear, motors and controls, exterior and interior lighting systems, regulators, conveyors, electric hoists, etc. Plant will be equipped for output of 100,000,000 lb. of pig metal per annum, with total connected load of close to 100,000-kw. Work will begin soon, with initial unit, requiring about 32,000-kw. of connected load noted, scheduled for completion in six months; two other units will be completed closely following. Entire project is estimated to cost about $10,000,000, and fund in that amount will be secured through Defense Plant Corporation, Washington, D. C., a federal agency. Bonneville Power Administration plans early construction of new 115,000-volt transmission line from connection with Bonneville-Oregon City, Ore., high-tension system to plant site, about 13 miles, with terminal power substation to be located at latter point; another line of same capacity, or 230,000-volt, still to be determined, will be built later along Washington State shore of Columbia River to Troutdale.

DENVER, COLO.—Bureau of Reclamation, Denver, receives bids until November 7 for one or two 82,500-kw., three-phase, 60-cycle, 16,500-volt, vertical-shaft a.c. electric generators for Boulder power plant, Boulder Canyon project, Arizona-California-Nevada (Specifications 1005). Also, until November 6, for five 230-kv., 1,200-amp., five-cycle oil circuit breakers; three 230-kv., 1,200-amp., three-pole, motor-gang-operated, selector-type disconnecting switches, with motor-gang-operated grounding blades; six 230-kv., 1,200-amp., three-pole, single-throw similar-type disconnecting switches; one 230-kv., 1,200-amp., three-pole, manually-gang-operated disconnecting switch; one 230-kv., three-phase, outdoor-type, lightning arrester for suspension mounting; and three 55,000-kva., 60-cycle, single-phase, water-cooled, 16,250 to 132,800/230,000 Y-volt transformers, for same power plant (Specifications 1003). All last noted equipment will be assembled and installed by government.

MONROE, LA.—Municipal Water, Light and Traction Department receives bids until November 4 for equipment for municipal power station, including boiler feed pump (Contract No. 2), de-aerator (Contract No. 3), combustion control apparatus and instruments (Contract No. 4), and ornamental street-lighting system (Contract No. 1). Burns & McDonnell Engineering Co., 107 West Linwood Boulevard, Kansas City, Mo., is consulting engineer.

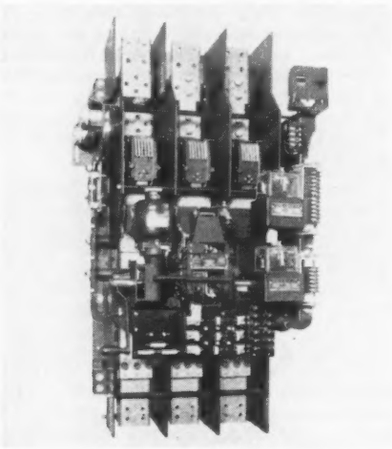
HARTFORD, CONN.—Hartford Electric Light Co. has taken out permit for construction of multi-story addition to South Meadow steam-electric generating plant, for proposed expansion in station. Installation will include a 45,000-kw. turbine-generator and accessories, high-pressure boilers and auxiliary equipment. Work on erection is under way. Entire project is reported to cost close to $4,000,000.

EUGENE, ORE.—Lane County Electric Cooperative, Inc., Odd Fellows Building, Eugene, plans construction of four power stations in connection with proposed transmission and distributing system, totaling about 334 miles, including terminal power substation for connection with Bonneville-Coulee transmission line, source of power supply. Fund of $410,000 has been secured through federal aid for project. R. W. Buford is superintendent, in charge.

NEW EQUIPMENT

Network Protector

High-capacity network protector has been designed for increased interrupting rating. It has a pivoted-bridge, seven-point con-



Type "MG-9" automatic a.c. network protector; rating, 3,000 amp. continuous, 40,000 r.m.s. interrupting, 125/216 volts, 60 cycles. **General Electric Co.**, Schenectady, N. Y.

tact arrangement instead of the solid silver line-contacts used previously. Hollow copper conductors are used for main conductor bars. The combined features are claimed to reduce contact maintenance.

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Motor-Baking Unit

Infra-red equipment is arranged as a unit for motor-baking jobs. Each arm is adjustable and is wired separately, making possible the use of any combination of reflectors.

Model "MBU-416-IR" motor-baking unit; uses 16 Para-Sphere reflectors and 250-watt lamps, total load 4 kw. **Fostoria Pressed Steel Corp.**, Fostoria, Ohio.

Resistors

Type "F" Koolohm resistors; sizes 10, 20, 35, 50, 90 and 120 watts. **Sprague Specialties Co.**, Resistor Division, North Adams, Mass.

Added to its line, the company announces resistors of furrule-type construction for "fuse clip" mounting and designed to meet U. S. Navy Department's resistor specification No. RE13A372J. Units are supplied in either inductive or non-inductive types, the latter having a residual inductance at all values of essentially zero, it is claimed. Outer shell of Pyrex glass is said to provide high-voltage insulation as well as additional protection against humidity.

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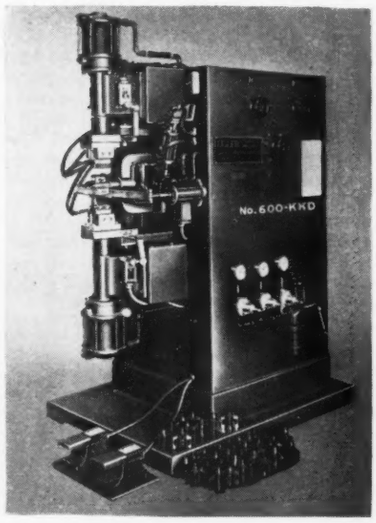
Spot Welder

Air-operated projection spot welding machine is arranged with jigs and fixtures for welding fins to steel tubing. It has 56 points of heat control. Rotating mandrel is air operated and automatically controlled. Welding time is controlled by automatic



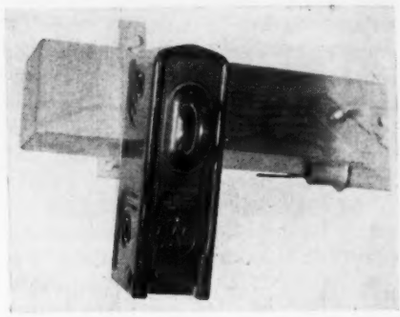
"No. 600-KKD" air-operated projection spot welding machine. **Eisler Engineering Co., Inc.**, Newark, N. J.

timing equipment. Production is approximately 200 finished pieces per hour, it is claimed.

BUYING ELECTRICAL EQUIPMENT?—McGraw-Hill's *Electrical Buyers Reference* is a convenient place to look first for manufacturers' product data, names and addresses.

Cutout

For use on a.c. circuits up to 12.5 kv., new primary fuse cutout has housing of Prestite porcelain and door of Moldarta.



Type "EA" primary fuse cutout; rated 50 amp., 5,000 volts. **Westinghouse Elec. & Mfg. Co.**, East Pittsburgh, Pa.

Fuse tube of fiber lined duck Micarta is designed to be moisture resisting. Dropout action of door indicates a blown fuse. Door can be removed and inserted by a standard hookstick. Same fuse holder, fuse tube, fuse door and disconnect blade are used on the 5-kv. and 7.5/12:5-kv. cutout, minimizing number of parts to be carried.

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Acoustical Material

"Cushiontone;" sizes, 12x12 in. and 12x24 in.; thickness, ½, ⅝ and ⅞ in. **Armstrong Cork Co.**, Lancaster, Pa.

Made of a special-density fibrous composition, a new acoustical material has 484 deep perforations per square foot to give high-sound-absorption values at standard frequencies, while its noise-reduction coefficient reaches as high as 75 percent, it is claimed. It may be used in areas such as control and load dispatcher's rooms, and in buildings where humidity conditions are not excessive. It is said to provide high degree of glare-free light reflection and may be repainted without loss of acoustical efficiency.

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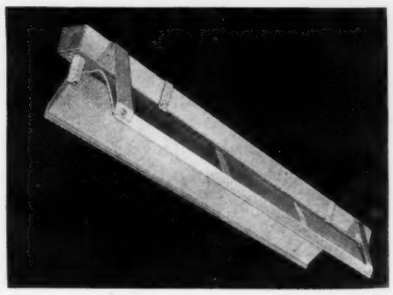
Fluorescent Reflector

Trough-type silver mirrored glass reflector is designed for use with F lamps, to produce an elongated strip of high-intensity illumination on the work plane. Maximum candlepower occurs at zero degree, according to the distribution curve.



Series "T-11" fluorescent permaflector; 3 1/16 in. deep, 8 in. wide, 11 in. long; two required with 24-in. lamp, three with 36-in. lamp, four with 48-in. lamp. **Pittsburgh Reflector Co.**, Pittsburgh, Pa.